

APPENDIX B

U.S. Patents:

404,501 to Pfanne

2,452,225 to Coloccia

2,555,933 to Renstrom

2,713,864 to Solomon

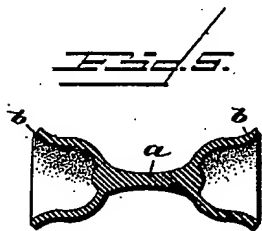
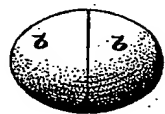
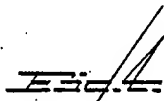
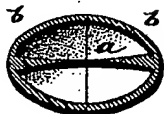
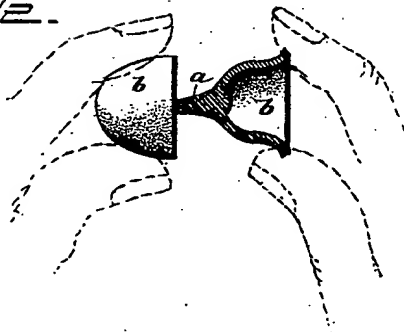
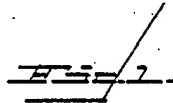
5,076,299 to Wistrand et al.

(No Model.)

C. A. G. PFANNE.
HAIR CURLING DEVICE.

No. 404,501.

Patented June 4, 1889.



Witnesses,
Walter H. Humphrey
Chas. Putzke

Inventor,
Carl A. G. Pfanne
By Johnson & Johnson
his Attorneys.

UNITED STATES PATENT OFFICE.

CARL A. G. PFANNE, OF BROOKLYN, NEW YORK, ASSIGNOR TO PARKER,
STEARNS & SUTTON, OF SAME PLACE.

HAIR-CURLING DEVICE.

SPECIFICATION forming part of Letters Patent No. 404,501, dated June 4, 1889.

Application filed January 21, 1889. Serial No. 296,971. (No model.)

To all whom it may concern:

Be it known that I, CARL A. G. PFANNE, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Hair-Curling Devices, of which the following is a specification.

I have produced a device for curling or piping hair for ladies' use, consisting of a stem around which the hair is wound, provided with an elastic reversible cup-shaped retainer at each end adapted to be turned inside out to permit the hair to be wound upon the stem, and to be turned in over the stem and over the hair thereon like a sleeve to maintain the hair in a coiled condition thereon, so as to set it in curls when unwound from the device.

The accompanying drawings illustrate my novel hair-curling device, and the novelty thereof will be embodied in specific claims concluding this specification.

Referring to the drawings, Figure 1 represents the device as it is used for curling woman's hair. Fig. 2 is a partial section showing one of the elastic cup-shaped retainers turned in to envelop the end of the stem and the other turned out at the end of the stem. Fig. 3 is an axial section of the device, with both elastic retainers turned in over the hair wound upon the stem. Fig. 4 is an elevation of the device as shown in Fig. 3, and Fig. 5 shows a longitudinal section of the device as it is produced from the mold as a complete article of rubber.

The hair-curling device is preferably produced of rubber in a mold, with a suitable stem *a*, having on each end a cup or bell shaped or tubular retainer or part *b*, of a diameter to form an inclosing space over the end of the stem and over the hair wound thereon, each retainer having a length sufficient to cover the stem and the hair wound thereon. These elastic cup-shaped retainers for this purpose are secured on each end of the stem, and are sufficiently thin to be turned inside out to uncover the stem to allow the

hair to be wound thereon, and to be reversed or turned over the stem to inclose it like a sleeve and inclose and retain the hair in its wound condition upon the stem, so as to set it as stated, and to be again easily uncovered to unwind the hair from the stem.

It is obvious the stem may be made of wood or paper, and the elastic cup or bell shaped retainers pinned or otherwise suitably fastened to the ends of the stem; but I prefer to produce it of rubber as a complete article, and when so produced the retainers stand out from the ends of the stem in flaring form, so that when turned in over the ends of the stem they will act like retaining-bands all round over the hair wound upon the stem. When so molded, it is vulcanized to render the retainers elastic and easily turned inside out on the ends of the stem.

I claim—

1. A hair-curler composed of a stem upon which the hair is wound and an elastic retaining-cup on the end of the stem adapted to be turned inside out to uncover or to cover it, for the purpose stated.

2. A hair-curling device consisting of a stem upon which the hair is wound, having at each end an elastic retaining cup part, the length of both retaining parts being equal to the length of the stem, and adapted to be turned inside out upon the stem, for the purpose stated.

3. As a new article of manufacture, the herein-described rubber hair-curling device, consisting of a stem having on each end a cup-shaped retaining part adapted to be turned inside out, substantially as described, for the purpose specified.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

CARL A. G. PFANNE.

Witnesses:

A. E. H. JOHNSON,
WM. H. DE LACY.

Oct. 26, 1948.

P. T. COLOCCIA

2,452,225

HAIR CURLING DEVICE

Filed March 7, 1947

FIG. 1



FIG. 2

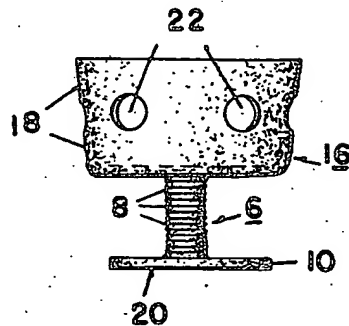


FIG. 3

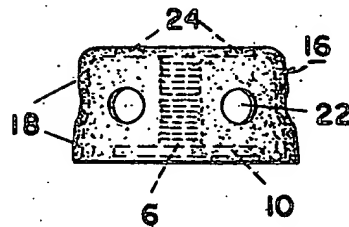


FIG. 4

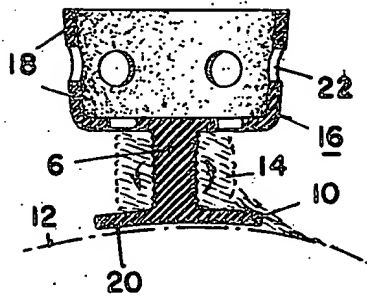


FIG. 6

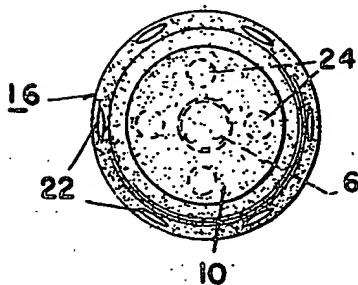
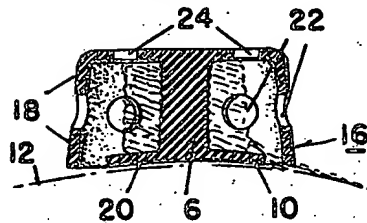


FIG. 5



Inventor

PHILIP T. COLOCCIA,

Axel M. Pedersen

Attorney

UNITED STATES PATENT OFFICE

2,452,225

HAIR CURLING DEVICE

Phillip T. Coloccia, Hillside, N. J.

Application March 7, 1947, Serial No. 733,100

5 Claims. (Cl. 132-40)

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The present invention relates to a hair curling device and more particularly to a flexible form on which the hair may be wound during the curling operation, being held on the scalp so that the plane of the curls when completed will be parallel to the scalp and held in position during treatment to produce permanent waves by the use of waving fluid, or to provide curls in the form of finger waves or watch spring curls, as desired.

Heretofore various forms of hair curling devices have been made, including hair curling apparatus of more or less complexity by which the hair is subjected to fluid treatment followed by a heat treatment at uncomfortably high temperatures for substantial periods of time. Various devices for holding curls in place have also been employed for cold wave treatment, such as bobby pins and various other forms of curl holding fasteners, but none of these devices have proved entirely successful.

Generally, in the treatment of the hair to produce permanent waves by either the heating process, or by the cold wave treatment, a hair softening chemical is employed which renders it limp or soft, without hydrolyzing the keratin of the hair, or bringing about any chemical change which would prevent the reconversion of the hair to its original physical state, and then applying a neutralizing chemical serving to react with the softening chemical originally applied, whereby the hair is reconverted to its original state. After applying the neutralizer, which prohibits the curling fluid from acting further, the hair may be rinsed with luke warm water with the curls set on the curling device hereinafter described in detail, and the hair may then be dried in any suitable manner.

One of the objects of the present invention is to provide a form of curling device which may be used by inexperienced persons without the use of bobby pins or other metal fastening means for the making of ordinary curls or permanent curls.

Another object of the invention is to provide a form of hair curling device which may be made at a low cost and which is adapted to be used at home with safety and ease in curling the hair.

Another object of the invention is to provide a form of curling device which may be made of rubber of a form which will be unaffected by oils and chemicals normally used in the curling of hair and which may be retained in place on the scalp with comfort while sleeping.

Another object of the invention is to provide a form of curling device which is adapted to be open while curls are being formed on one portion

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of the device and which may be closed or folded over the formed curls with provisions for ventilation or permitting air to contact with the curls, as well as permitting vaporization of moisture from the curls while held in place in the device.

With these and other objects in view, the invention comprises various features hereinafter more fully described and defined in the claims annexed hereto.

The various features of the invention are illustrated in the accompanying drawings in which:

Fig. 1 is a view in perspective showing a number or series of the devices of my invention in position on the scalp of a person during the hair curling operation;

Fig. 2 is a view in elevation of the device of my invention in open position;

Fig. 3 is a view in elevation of the device shown in Fig. 2 but in its folded position;

Fig. 4 is a sectional view in elevation indicating the upright position on the scalp while the device is open for the formation of a curl on the stem of the device;

Fig. 5 is a sectional view in elevation of the device in contact with the scalp in which the foldable or bowl portion is folded over the curl so as to enclose the same between the stem and the peripheral portion or inner sides of the bowl portion, and

Fig. 6 is a plan view of the device taken in an upward direction in Fig. 2.

Referring more in detail to the drawings, the numeral 2 designates the curling device or curlier adapted for the making of curls in situ by winding the hair 4 in the manner hereinafter described.

The curling device is preferably made of synthetic rubber, such as neoprene, which is adapted to withstand the solvent action of oils and chemicals such as are ordinarily employed in the cold waving of hair or in the various curling operations in which heat is employed. Although the use of synthetic rubber is preferred in the making of the device of my invention, it will be understood that ordinary rubber may be used, or a mixture of ordinary rubber with synthetic rubber, or reclaimed rubber, or chlorinated rubber, or suitable mixtures thereof, may be employed. In the composition employed, I may use any suitable antioxidant, such as "Neozone D," and suitable accelerators, as will be understood by those skilled in the art.

Referring to Fig. 2 of the drawings, the curling device comprises a stem 6 preferably formed with indentations or circular ridges 8 which serve to,

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retain the hair in position on the stem when folded thereon. A base portion 10 which is preferably circular in form so as to readily seat on the part of the scalp 12 adjacent the strand of hair 14 which is to be curled thereon, is employed together with a bowl portion or foldable portion 16, which is adapted to be folded over the stem 6 so as to enclose the stem and the base portion 10. The skirt portion, or side portions 18 of the bowl portion 16, is preferably of a length so that in the folded position it reaches the bottom 20 of the base portion 10 of the curler.

In order to permit access of air to the curl of hair enclosed around the stem 6, a series of lateral openings 22 are provided in the skirt portion or foldable bowl portion 16 of the curling device, which may be of suitable size so as to permit vaporization of moisture from the hair and to permit a circulation of air through the device during the curling operation. Instead of a single series of openings at the mid-portion of the skirt portion, I may provide a series of openings of uniform size, or of varying sizes which may be in staggered relation, and I may also provide a series of openings 24 in the bowl portion adjacent or in proximity to the stem 6 in order to assist in vaporization of moisture from the curl and to provide for additional access of air to the interior of the curling device in the folded position.

In the use of the device, the base portion 10 is first placed in contact with the scalp 12 adjacent the strand or tuft of hair which is to be curled, and the strand 14 is then wound around the stem 6 in a clockwise or counter clockwise direction, as may be preferred beginning at the lowest portion and winding the hair spirally upward against the holding elements or indentations 8, while the bowl portion remains in its upper or unfolded position. The hair may be wound up and down over the stem during the curling operation, depending upon the length of the strand or tuft of hair to be curled. After the curl is in place, it is held in position, as by means of the thumb and forefinger, while the skirt or bowl portion 16 is folded down over the curl, by which it is retained in the position indicated in Fig. 5 of the drawings. The hair may be allowed to remain in position on the curlers over night, or a suitable time such that the moisture from the hair is evaporated and a more or less permanent set of the curl is obtained.

After the curling operation is completed, and the hair has been suitably dried, the skirt or bowl portion 16 is first inverted into its upward extending position, as indicated in Fig. 4 of the drawings, and the curl is then held by means of the fingers in its position in a plane parallel to the scalp while the curling device 2 is removed by pulling the flexible base portion 10 through the curl. During the removal operation, the disc portion becomes bent into a more or less conical form, so that the base portion 10 passes through the curl without disarranging any part thereof.

It will be understood that the device of my invention is adapted to be used in a hair curling operation with the use of any suitable chemicals and with the use of heat or without heat as in the cold wave treatment, and is adapted to be used professionally by skilled hairdressers or by relatively unskilled persons in the home, either alone or with the assistance of others. By the use of the device for the curling of hair while sleeping, the use of bobby pins and other metal fasteners which have a tendency to fall out of the

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hair with slight movements while sleeping, and causing more or less discomfort by pressing against portions of the scalp, is entirely avoided.

It will be understood that various changes or modifications may be made in the device as herein described without departing from the spirit or scope of the invention as defined in the claims annexed hereto.

Having thus described the invention, what is claimed as new is:

1. A hair curling device adapted for positioning on the scalp adjacent a strand or lock of hair to be curled which comprises a flexible flat base portion, a stem portion extending upwardly therefrom, a bowl portion extending upwardly from the stem portion and adapted to be folded over in position around the stem portion so as to enclose said stem portion and said base portion and openings in said bowl portion to provide for ventilation of air during use of the device.

2. A rubber unitary hair curling device adapted for positioning on the scalp adjacent the strand or lock of hair to be curled and for the curling of hair in a plane parallel to the scalp which comprises a circular flat base portion, a stem member extending upwardly therefrom, a bowl portion extending normally downwardly from the stem portion to enclose the stem portion and the base portion and adapted to be inverted in position so as to extend upwardly from the stem member to permit the winding or curling of hair around the said stem member and openings in the side portions and the base portion of the said bowl portion to permit ventilation and vaporization of moisture from the hair during use of the device, the said circular flat base portion being of limited thickness to provide flexibility such that it may be drawn through a curl without disturbing the position of the strands of hair in the curl.

3. A rubber unitary hair curling device adapted for positioning on the scalp adjacent the strand or lock of hair to be curled in a plane parallel to the scalp which comprises a thin flexible base portion having a flat surface adapted to contact with the scalp, a cylindrical stem member extending upwardly from said base portion, circular ridges on said stem member adapted to hold strands of hair in position thereon, a bowl portion united to the upper end of the stem member and folded in normal position over the stem and base portion, so that when said bowl portion is inverted into its upper position to permit winding or curling of hair on the stem portion, the bowl portion may be readily reinverted into its normal position surrounding the hair on the stem member and said base portion, and openings through the sides and base of the bowl portion to provide for ventilation of air during use of the device.

4. A unitary hair curling device of molded rubber which comprises a thin flexible disk portion adapted to be positioned in contact with the scalp, a stem member united to the disk portion and extending upwardly therefrom a sufficient distance to permit curling long strands of hair thereon, a bowl portion connected to said stem member and extending downwardly therefrom in its normal position, the bowl portion having sides of a length such that when folded over a curl in its normal position, the sides will extend to the said base portion and remain over the curl without substantial tension in its normal folded position, the said bowl portion being adapted to be inverted in position so as to extend upwardly from the stem member to permit winding or curl-

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ing of hair on the said stem member in a plane parallel to the scalp, and openings in the body of the bowl portion to permit ventilation of air and evaporation of moisture from the hair during use of the device.

5. A rubber unitary hair curling device which comprises a thin, flexible disk portion adapted to be positioned flat against the scalp, a solid, non-collapsible stem member united to the center of the disk portion and extending upwardly therefrom a sufficient distance to permit curling of long strands of hair thereon, an invertible cylindrical portion connected to the upper end of said stem member, the internal diameter of said cylindrical portion being greater than the external diameter of said disk portion, said cylindrical por-

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tion being hollow and extending normally downwardly to enclose said disk portion, and openings extending through said cylindrical portion to provide ventilation during use in a hair curling operation.

PHILIP T. COLOCCIA.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
404,501	Pfanne	June 4, 1889
2,433,141	McPherson	Dec. 23, 1947

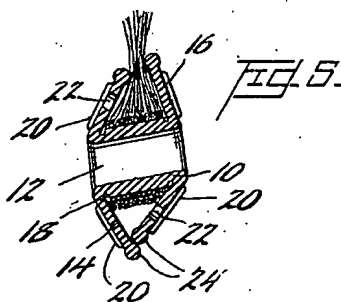
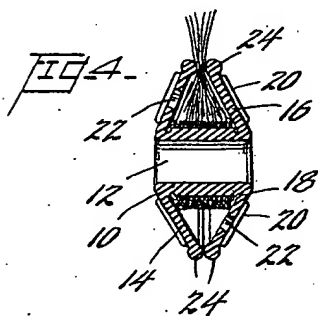
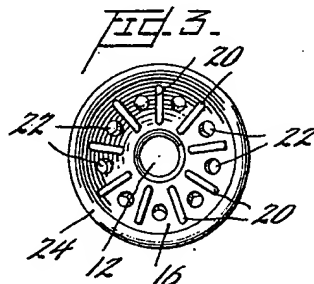
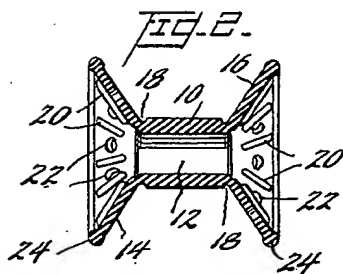
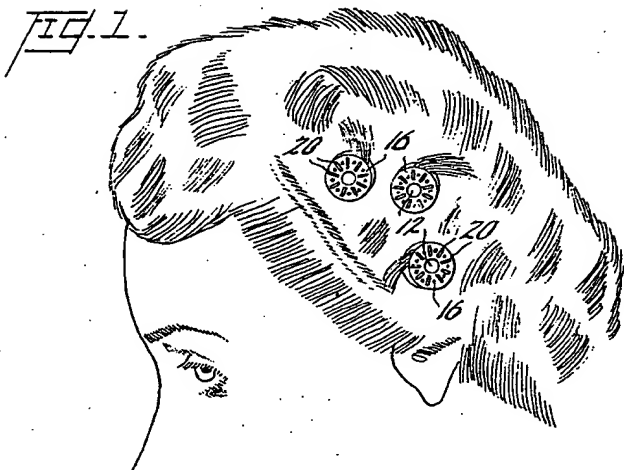
June 5, 1951

C. W. RENSTROM

2,555,933

CUSHION CURLER

Filed Jan. 4, 1950



INVENTOR

Carl W. Renstrom,

BY *Cushman, Darby & Cushman*

ATTORNEY

UNITED STATES PATENT OFFICE

2,555,933

CUSHION CURLER

Carl W. Renstrom, Omaha, Nebr., assignor to
Tip-Top Products Company, Omaha, Nebr., a
corporation of Nebraska

Application January 4, 1950, Serial No. 136,730

4 Claims. (Cl. 132-40)

1

The present invention relates to hair curlers of the type employed to form and set a curl either by the use of the curler alone or in association with well known treatments which may be used to set the curls.

A principal object of the invention is to provide such a hair curler of unitary construction which is of a design to make it highly flexible in order to facilitate the application and removal of the curler and to eliminate discomfort to the wearer when in use, yet while firmly retaining the hair in its curled condition during use.

A further object of the invention is to provide such a curler which is characterized by the simplicity of its construction and the ease with which it may be manufactured, as well as providing for complete ventilation and circulation of air in order to dry the hair when set, if it has been treated with any liquid or vapor during setting operations.

In the drawings, which disclose the construction and manner of operation of the hair curler:

Figure 1 is a view showing the manner in which the curlers are worn, it being noted that they are decorative in appearance permitting them to be worn during the day without embarrassment;

Figure 2 is a central sectional view through the axis of the curler showing the conical gripping portions in their expanded condition;

Figure 3 is an end view of the curler with the conical portion in its expanded position; and

Figures 4 and 5 are views similar to Figure 2, showing the conical portions in their retracted positions and illustrating the manner in which the curl is wound on and retained by the curler.

It will be understood that this curler may be made of rubber or any well known rubber or plastic compounds, and that the material may be delicately tinted in attractive pastel shades of colors depending on the taste of the purchaser. It will further be understood that this material may be such as to withstand the effects of any liquids or vapors used in any well known treatments of the hair which may be employed, although the curler is useful in itself without being associated with such treatments.

An important feature of the curler is the construction which provides opposite conical portions which when sprung toward one another, each press inwardly toward the other to firmly grip the hair and retain it in the curler. While two such positively retaining portions are provided, the overall length of the stem is relatively small, so that the curler may be worn against the scalp without any discomfort, for instance,

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when the user is sleeping. While the stem is relatively short, it is of great flexibility, and this highly flexible and hollow stem will permit the retaining portions to adjust themselves if necessary with respect to one another, as shown in Figures 4 and 5, in order to hold the curl in the manner in which it was set and without any discomfort to the wearer.

Referring to Figure 2, the curler comprises a highly flexible relatively short stem 10, which is of cylindrical form but of quite thin wall thickness because of the relatively large longitudinal opening 12 which extends therethrough.

On opposite ends of the stem there are cooperating conical hair gripping members 14 and 16 which are secured near their apices on opposite ends of the stem. These hair gripping members have straight outwardly flaring conical walls as shown, and the degree of flare may be in the neighborhood of 45° or more from the axis of the stem.

The conical portions are connected with the stem in a most flexible manner as indicated at 18, where the thickness of the material is reduced all around the curler providing a definite plane for yielding action, so that the gripping portions may be easily pushed inwardly to their gripping positions as shown in Figure 4, or outwardly to their expanded positions, without the application of any appreciable force.

Each of the gripping portions is provided with radially extending strengthening thickened portions or ribs 20 on their outside conical faces, whereby the gripping portions are maintained in straight conical condition whether expanded or retracted. Thus, the yielding action of the gripping portions is substantially confined to the flexible union or joint 18, and when the gripping portions are pushed past dead center in either direction, they will spring toward that position to which they are urged. In particular, it will be apparent that when they are urged to their retracted or hair-gripping position, as in Figure 4, each portion will positively spring toward the other to grip the hair, yet, the curler is of such flexibility that these portions may give and take with respect to one another upon application of any pressure, as when the wearer is sleeping, in order to avoid any pulling of the hair and resulting discomfort. It has previously been noted that the overall device as viewed in Figure 4 is relatively flat, so that it is not of objectionable mass when worn.

Located between the ribs 20 are spaced openings 22 extending through the gripping portions,

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whereby ventilation is provided to permit the curl to dry when it is being set, and of course, the relatively wide opening 12 through the stem likewise facilitates ventilation.

The periphery of each hair gripping portion is in the form of a bead 24, which may be more pronounced on the exterior face of the gripping portion. These enlarged beads assist in firmly gripping the hair as indicated in Figure 4.

When the device is to be used, it is first opened to its expanded condition of Figure 2, and then a curl is wound about the stem 10 in the usual manner. The curl may be loosely or tightly wound, as desired, and it will be understood that the hollow stem may be flexed and compressed as desired when the curl is being wound. When the curl is wound as close to the scalp as desired, the gripping portions 14 and 16 are pressed toward one another and each one positively snaps toward the other as they go over the dead-center position thus firmly embracing the curl as wound.

The length of the stem with respect to the length and angularity of the gripping portions is such that the periphery of one portion will tend to enter within the periphery of the other portion, as indicated in Figure 5, on one side of the curler, and the stem is flexible enough to shift laterally within the curler to permit the gripping portions to be presented toward one another in this manner. When a curl is wound in the usual case, the gripping portions will be presented eccentrically with respect to one another, and the scalp end of the curl will usually leave the confined space of the curler at one of the points as indicated in Figure 5, where the peripheral edge of the gripping portion 16 overlies that of the portion 14. At the opposite side of the curler, the arrangement is the reverse of that described as is apparent in Figure 5.

Thus, the gripping members may yield back and forth with respect to one another when any pressure is applied during use, and when the curler is being applied, the opposite portions may be adjusted with respect to one another in order to position the curl on the head in the desired position. It will be evident that the curler thus adapts itself to any skillful forming of the curls with relation to one another, as may be desired, although the construction similarly is of advantage in its flexibility if the curls are simply formed in a haphazard manner.

When the curlers are to be removed, all that is necessary is that the gripping portions be grasped at the periphery and pulled outwardly, and these portions will each snap positively outwardly when urged beyond the dead-center position. In this connection, it will be apparent that at those portions where one edge overlies the other, as at 24 in Figure 5, the force to open the curler may be applied with convenience without disturbing the curl. It will also be understood that in the practice of highly skilled hair-dressing the flexible construction will enable the operator to flex the gripping parts with respect to one another in the desired manner when removing the curl, so as to leave it set in a particular position or arrangement.

While the design is such that the opposite gripping portions may assume the concentric position shown in Figure 4, the relative dimensions and angularity of the stem and the gripping portions are such, coupled with the positive tendency of those portions to snap toward one another, that the curler usually assumes the eccentric arrangement of Figure 5, the side of one portion

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tending to enter the other beneath the lip of the latter.

Due to the great flexibility of all parts of the curler, its manner of use may be varied in accordance with the technique of the operator. For instance, a curl may be wound with the device in the condition of Figure 2, and then only one gripping member may be turned inwardly and compressed on opposite sides against the stem to hold the wound curl in tight condition on the stem. With the curl thus gripped by hand with one inwardly turned and compressed member, the opposite or second member may then be turned inwardly so that it overlies the first member turned in at opposite sides thereof (where the first member was compressed) while permitting opposite and intermediately formed open lips of said second member to protrude beyond and beneath the periphery of said first member thus providing openings for the scalp end of the curl. Various other techniques of use will suggest themselves during use of this highly flexible device.

In manufacturing the curler, the stem 10 may be made relatively short with respect to the size of the conical members in order to increase the clamping action of these members. That is, the relative length of the stem with respect to the size of the clamping members governs or regulates the clamping action of the members against one another.

It will be understood that I have provided a simple hair curler of attractive design and of great usefulness due to its novel flexible construction, and one which is so compact and yielding as not to provide any objectionable bulk against the scalp, when worn.

I claim:

1. A unitary hair curler made of rubber or the like comprising a hollow flexible tubular stem having integral outwardly flared straight wall conical hair gripping members secured near their apices on opposite ends of said stem, said conical members having a plurality of thickened portions extending radially from the ends of said stem along one face thereof and having ventilating openings therethrough between said thickened portions, said conical members being joined to said stem by flexible joints comprising reduced circular areas at the ends of said stem whereby they may be snapped inwardly and outwardly with respect to one another on said stem, said conical members being of such size with relation to the length of the stem that their free peripheries contact each other when they are turned inwardly to yieldably grip the scalp end of a curl wound on said stem.

2. A unitary hair curler made of rubber or like material comprising a flexible circular stem having integral outwardly-flared conical hair-gripping members secured near their apices on opposite ends of said stem and being joined thereto by flexible joints comprising circular areas of reduced material thickness whereby said members may be snapped inwardly and outwardly with respect to one another on said stem, said conical members being of such size with relation to the length of said stem that their free peripheries contact each other when they are turned inwardly to yieldably grip the scalp end of a curl wound on said stem.

3. A unitary hair curler made of rubber or like material comprising a flexible circular stem having integral outwardly-flared conical hair-gripping members secured near their apices on op-

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posite ends of said stem and having a plurality of strengthening elongated thickened portions extending radially from the ends of said stem along one face thereof, said conical members being joined to said stem by flexible joints comprising circular areas of reduced material thickness, whereby said members may be snapped inwardly and outwardly with respect to one another on said stem, and being of such size with relation to the length of said stem that their free peripheries contact each other when they are turned inwardly to yieldably grip the scalp end of a curl wound on said stem.

4. A unitary hair curler made of rubber or like material comprising a relatively short flexible circular stem having integral outwardly-flared conical hair-gripping members secured near their apices on opposite ends of said stem and being joined thereto by flexible joints whereby said members may be snapped inwardly and outwardly with respect to one another on said stem, said conical members being of such size with relation

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to the length of said stem that their free peripheries contact each other when they are turned inwardly to yieldably grip the scalp end of a curl wound on said stem, the major diameter of said conical members being somewhat greater than the length of said stem to provide a tapered-edge disk-like shape to the curler, when in curl-gripping position, that enables the curler to lie substantially flat against the head and thereby to be used without discomfort.

CARL W. RENSTROM.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
404,501	Pfanne	June 4, 1889
2,268,952	McElwain	Jan. 6, 1942
2,423,420	Talbot	July 1, 1947
2,452,225	Coloccia	Oct. 26, 1948

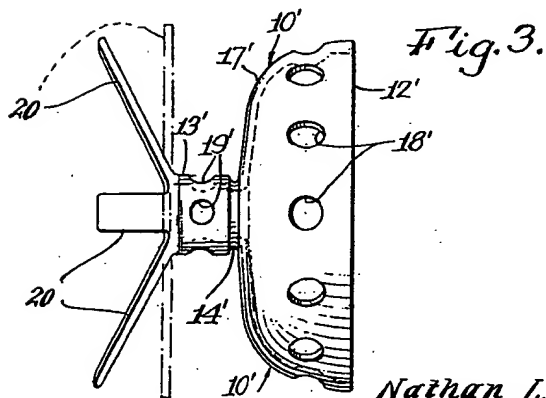
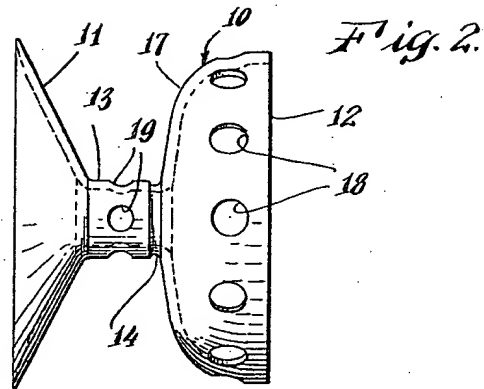
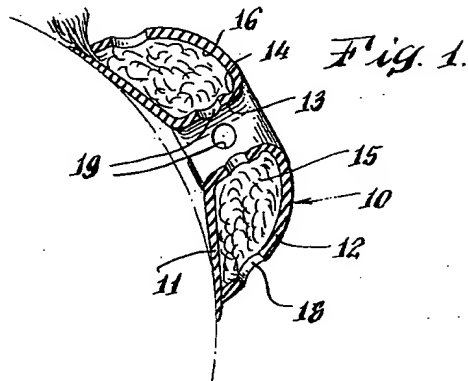
July 26, 1955

N. L. SOLOMON

2,713,864

HAIR CURLERS

Filed Oct. 8, 1952



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2,713,864

HAIR CURLERS

Nathan L. Solomon, Englewood, N. J.

Application October 8, 1952, Serial No. 313,634

3 Claims. (Cl. 132-40)

This invention relates to devices for use in forming and supporting curls upon the head. More particularly, the invention deals with a flexible device of the character described having a conical end to substantially conform with and fit the scalp and a reversibly flexed cup end adapted to house and support a curl upon the first named end. Still more particularly, the invention deals with a device of the character described which is apertured to provide circulation of air through the curl receiving chamber of the device.

The novel features of the invention will be best understood from the following description, when taken together with the accompanying drawing, in which certain embodiments of the invention are disclosed and, in which, the separate parts are designated by suitable reference characters in each of the views and, in which:

Fig. 1 is a view diagrammatically illustrating a part of the scalp with one of my improved curl forming devices arranged thereon and shown in section.

Fig. 2 is a side elevation of the device shown in Fig. 1 in the normal position thereof, preparatory to winding hair on the device in forming a curl; and

Fig. 3 is a view, similar to Fig. 2, showing a modification.

In Figs. 1 and 2 of the drawing, I have shown at 10 a curl forming and supporting device, comprising a more or less spool-like structure in the normal position thereof, as noted in Fig. 2, in other words, having a base portion 11 which is generally conical in form or in the form of a conical cup with a recessed lower surface. The other or upper end 12 of the device comprises a cup-shaped body joining an intermediate tubular portion 13 in a weakened wall 14, the latter facilitating flexure of the cup end 12 from the position shown in Fig. 2 to a position substantially similar to that illustrated in Fig. 1 of the drawing. In the latter position, the cup end 12 forms a casing or jacket enveloping or housing a curl, diagrammatically seen at 15 in the chamber 16 of the device. The chamber 16 is formed between the end 11, the tubular portion 13 and the casing cup 12. Normally, the wall structure of the cup end 12 is rounded, as seen at 17, and the walls are provided with circumferentially spaced apertures 18, providing circulation of air in the chamber 16. The tubular portion 13 is also apertured, as seen at 19, to aid in this circulation. In Fig. 3 of the drawing, I have shown a slight modification and, in said figure, 10' represents a curler device which is the same structure as the device 10, except that substituted for the conical cup-shaped end 11 are a plurality of circumferentially spaced yieldable arms or fingers 20, which normally assume an angular position to again generally outline a conical cup for reception of the scalp and these arms or fingers extend integrally from the tubular portion 13' which is similar to the tubular portion 13. In Fig. 3 of the drawing, 12' represents the cup end, similar to the cup end 12, 17' the rounded portion, 18' the spaced apertures in the cup end. The tubular portion 13' also includes the apertures 19'. In other words, the structure of Fig. 3 is identical with the structure of Fig. 2,

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with the exception of the structure of the fingers 20 for the base portion 11.

The device is formed from rubber or other flexible material and it will be apparent that the arms 20 are free to flex in the manner indicated in dotted lines in Fig. 3 in arrangement of the device upon the scalp, while at the same time, these arms will guide the winding of the hair on the curler prior to the flexure of the outer cup into a position similar to that shown in Fig. 1 of the drawing. It will also be apparent that the conical cup end 11 is capable of flexure in adapting the same to a snug arrangement upon the scalp, thus keeping the resulting device in close proximity to the scalp and substantially obviating any pressure points or sections, thus rendering the curlers comfortable to wear.

In addition to flexing from the full to the dotted line position shown in Fig. 3, the fingers or arms might also be flexed to assume a position substantially in alignment with the tube 13' in withdrawing the curler from a curl without materially disturbing the curl, which operation would be performed by first flexing the outer cup casing from a position shown in Fig. 1 to that shown in Fig. 2 and then to lightly hold the curl on the tubular portion 13', while pulling outwardly, in which operation, the arms 20 would flex sufficiently to pass through the center of the curl, thus leaving the curl in a substantially undisturbed condition upon the scalp.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A curler comprising a one-piece device of flexible material, said device comprising a central smaller diameter tubular portion opening through both ends of the device, one end of said tubular portion having an integral rounded wall cup-shaped part joining the tubular portion in a weakened wall, the other end of said tubular portion having means extending integrally and angularly thereto and radially a distance slightly greater than the diameter of said cup-shaped part, said weakened wall facilitating flexure of the cup-shaped part into inverted position to envelope the tubular portion and engage said first named means at a position inwardly of the periphery of said means, means for circulating air through said tubular portion and the cup-shaped part, when in inverted position, to dry a hair curl arranged on the tubular portion within said cup-shaped part, and said last named means comprising circumferentially spaced apertures in the tubular portion and cup-shaped part.

2. A curler comprising a one-piece device of flexible material, said device comprising a central smaller diameter tubular portion opening through both ends of the device, one end of said tubular portion having an integral rounded wall cup-shaped part joining the tubular portion in a weakened wall, the other end of said tubular portion having means extending integrally and angularly thereto and radially a distance slightly greater than the diameter of said cup-shaped part, said weakened wall facilitating flexure of the cup-shaped part into inverted position to envelope the tubular portion and engage said first named means at a position inwardly of the periphery of said means, means for circulating air through said tubular portion and the cup-shaped part, when in inverted position, to dry a hair curl arranged on the tubular portion within said cup-shaped part, said last named means comprising circumferentially spaced apertures in the tubular portion and cup-shaped part, and said first named means comprising a conical cup defining a substantially conical socket beyond the end of said tubular portion.

3. A curler comprising a one-piece device of flexible material, said device comprising a central smaller diameter tubular portion opening through both ends of the device, one end of said tubular portion having

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an integral rounded wall cup-shaped part joining the tubular portion in a weakened wall, the other end of said tubular portion having means extending integrally and angularly thereto and radially a distance slightly greater than the diameter of said cup-shaped part, said weakened wall facilitating flexure of the cup-shaped part into inverted position to envelope the tubular portion and engage said first named means at a position inwardly of the periphery of said means, means for circulating air through said tubular portion and the cup-shaped part, when in inverted position, to dry a hair curl arranged on the tubular portion within said cup-shaped part, said last named means comprising circumferentially spaced aper-

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tures in the tubular portion and cup-shaped part, and said first named means comprising a plurality of circumferentially spaced fingers defining a substantially conical socket beyond said tubular portion.

References Cited in the file of this patent

UNITED STATES PATENTS

2,452,225	Coloccia	Oct. 26, 1948
2,555,933	Renstrom	June 5, 1951

FOREIGN PATENTS

1,013,798	France	May 7, 1952
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United States Patent [19]

Wistrand et al.

[11] Patent Number: 5,076,299

[45] Date of Patent: Dec. 31, 1991

[54] FLEXIBLE LOCKING HAIR CURLER

[75] Inventors: John C. Wistrand, New Canaan; Vito Carlucci, Stratford, both of Conn.

[73] Assignee: Clairol Incorporated, New York, N.Y.

[21] Appl. No.: 341,885

[22] Filed: Apr. 24, 1989

[51] Int. Cl.⁵ A45D 2/18

[52] U.S. Cl. 132/253; 132/245; 132/247; 132/254

[58] Field of Search 132/222, 223, 226, 229, 132/233, 245, 247, 250, 253, 254, 265

[56] References Cited

U.S. PATENT DOCUMENTS

404,501	6/1889	Pfanne	132/253
2,452,225	10/1948	Coloccia	132/247
2,555,933	6/1951	Renstrom	132/247
2,623,530	12/1952	Solomon	132/253
2,713,864	7/1955	Solomon	132/253
3,257,541	6/1966	Jorgensen	132/229
3,483,876	12/1969	Planel	132/229
4,236,540	12/1980	Takagi et al.	132/233
4,579,132	4/1986	Thaler	132/226

FOREIGN PATENT DOCUMENTS

247539	10/1963	Australia	132/252
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979883 5/1951 France 132/253
313889 5/1956 Japan

Primary Examiner—John J. Wilson

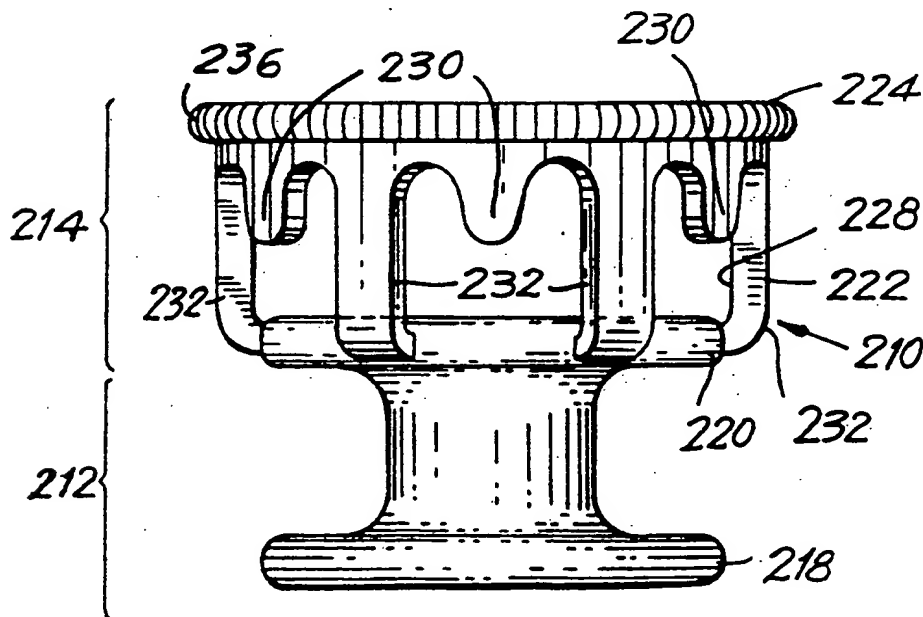
Assistant Examiner—Frank A. LaViola

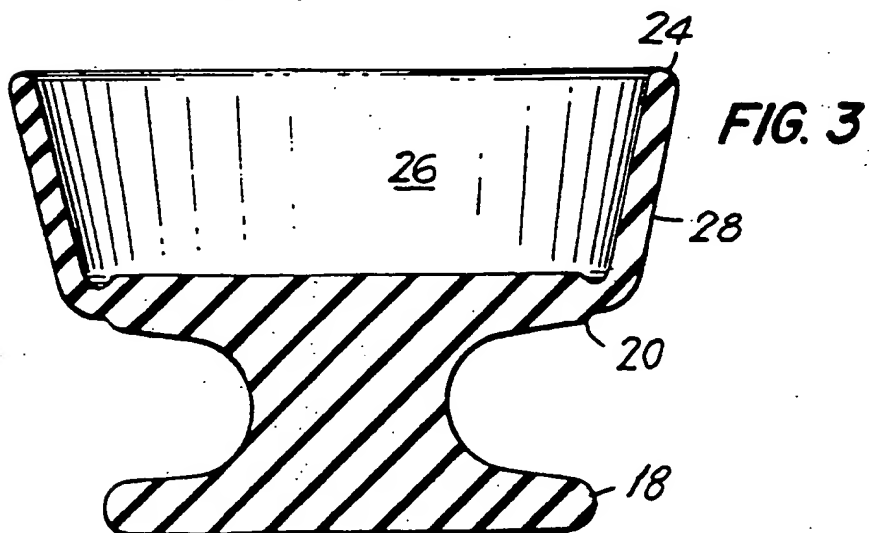
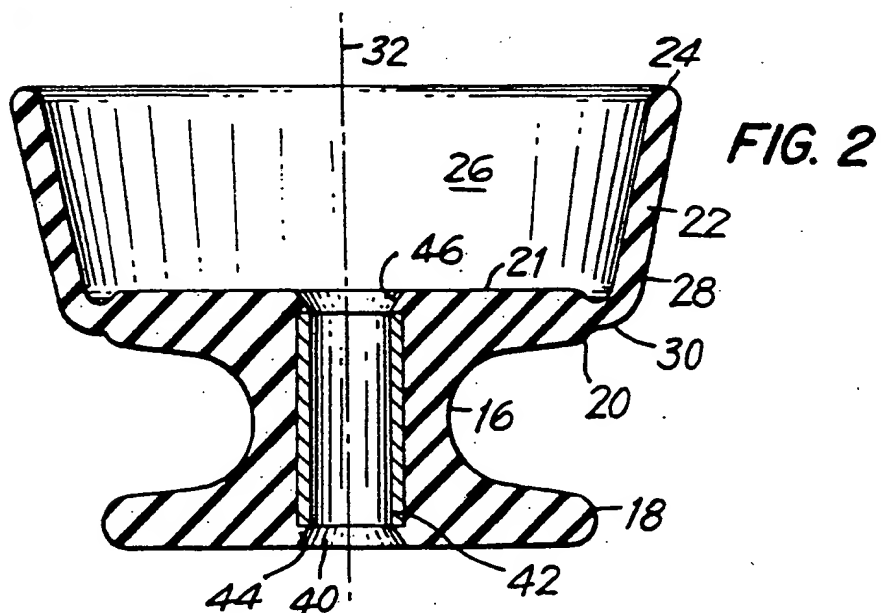
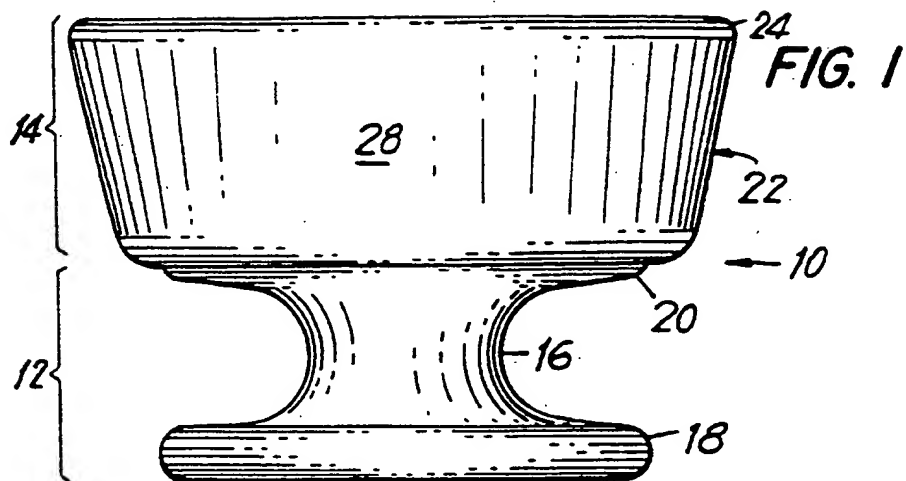
Attorney, Agent, or Firm—Gene Warzecha; Anthony M. Santini

[57] ABSTRACT

A bobbin or spool type hair curler having a cylindrical hair roller portion formed between a pair of opposing parallel flanges and provided with a pliable, integrally formed, cup-shaped closure member. The closure member is axially aligned to one of the end flanges of the spool shaped hair roller portion. The wall of the cup-shaped closure member extends away from the spool shaped portion and, after the hair is wound upon the spool shaped portion, the wall may be flipped substantially 180° about its point of attachment to its corresponding flange in order to place the rim of the cup-shaped closure member proximate to the other flange to thereby retain the hair around the spool shaped portion. The invention additionally includes a method for curling hair with the aforementioned device and, in one embodiment the hair curler is provided with an axial throughbore and the invention further includes a method for heating same.

17 Claims, 6 Drawing Sheets





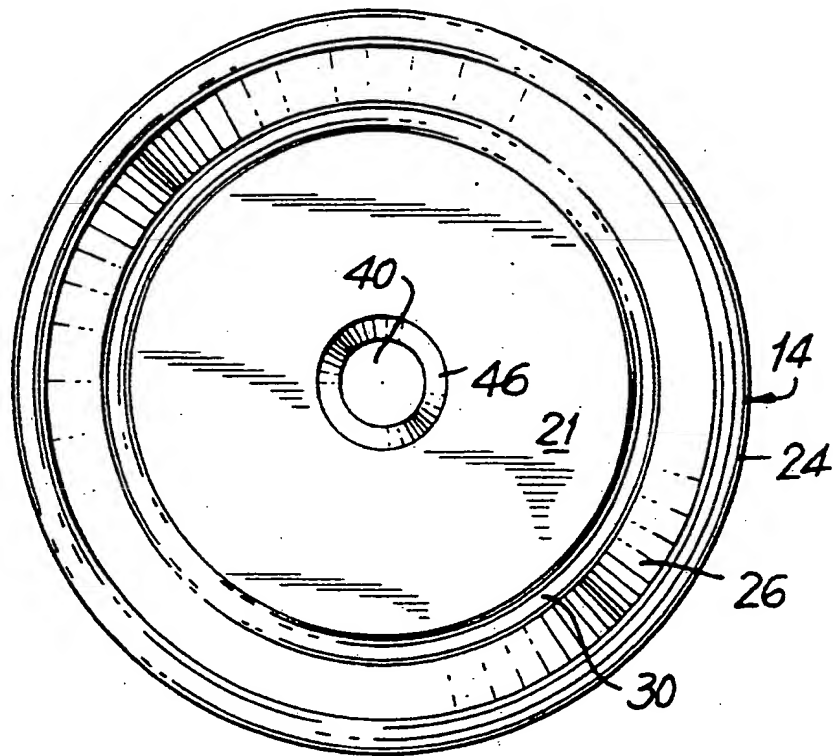


FIG. 4

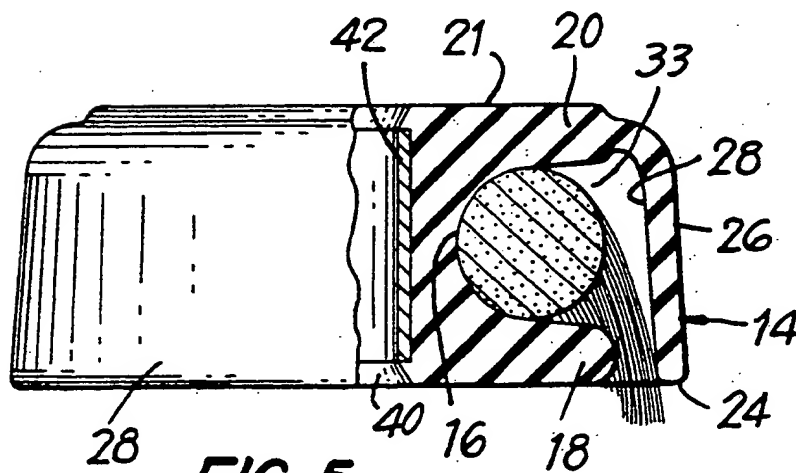


FIG. 5

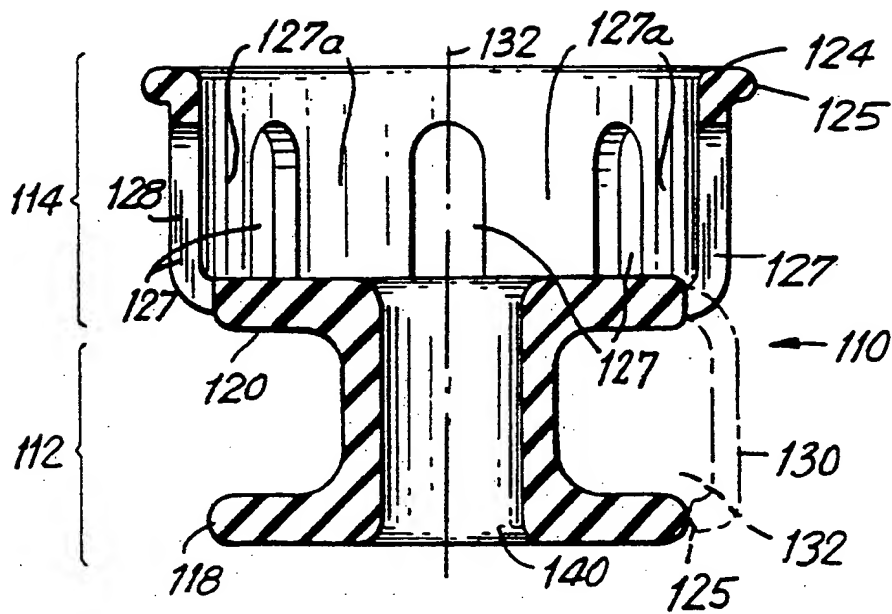


FIG. 6

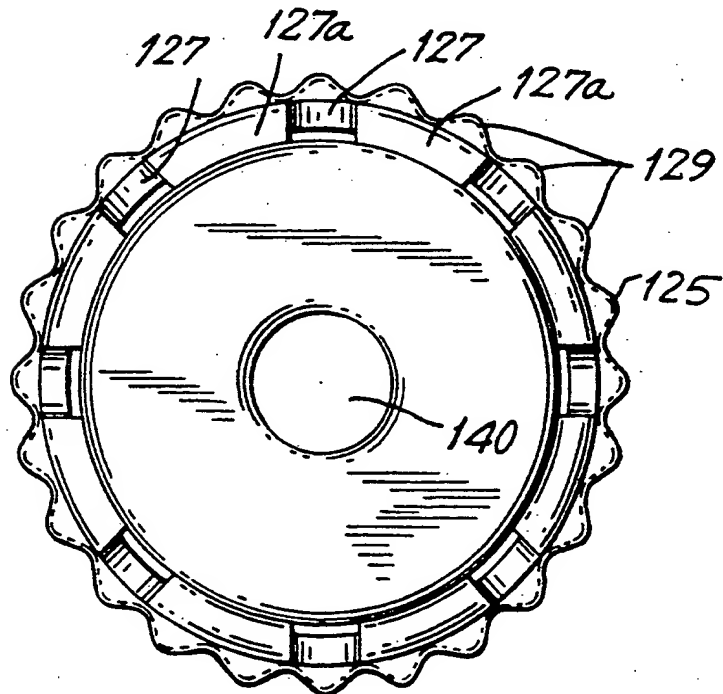
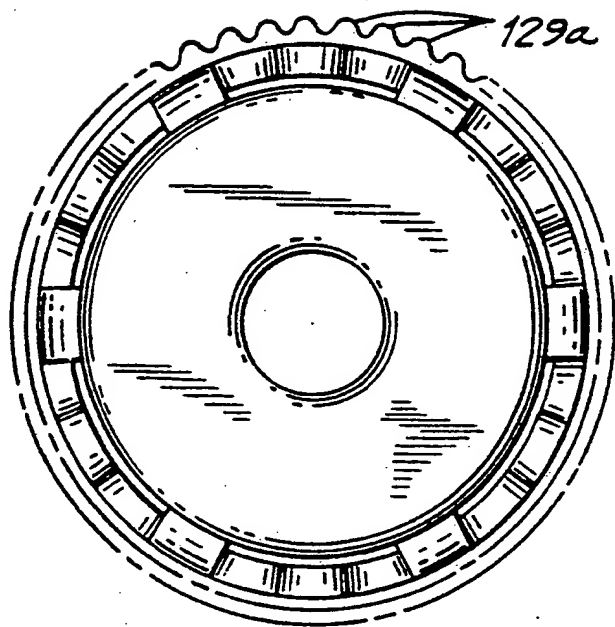
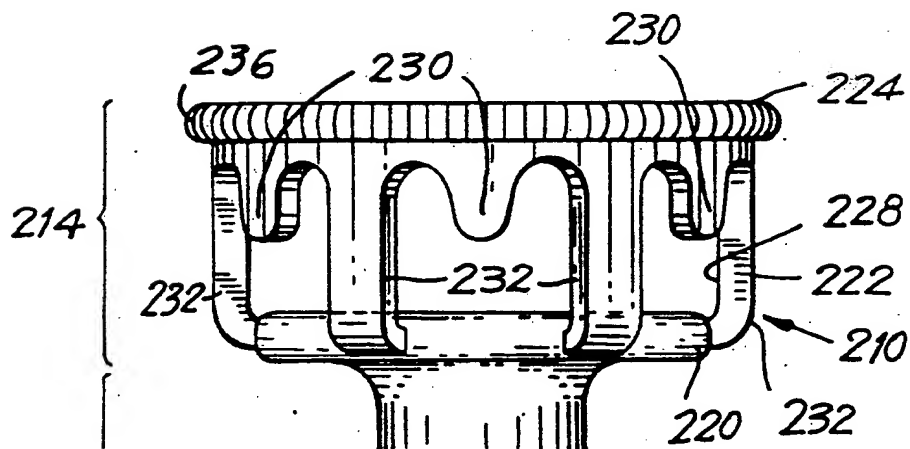


FIG. 7

**FIG. 8**

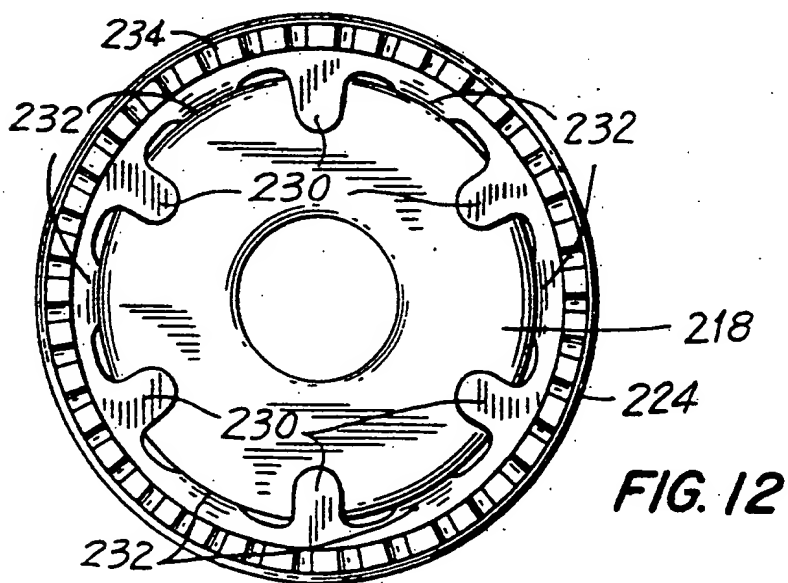
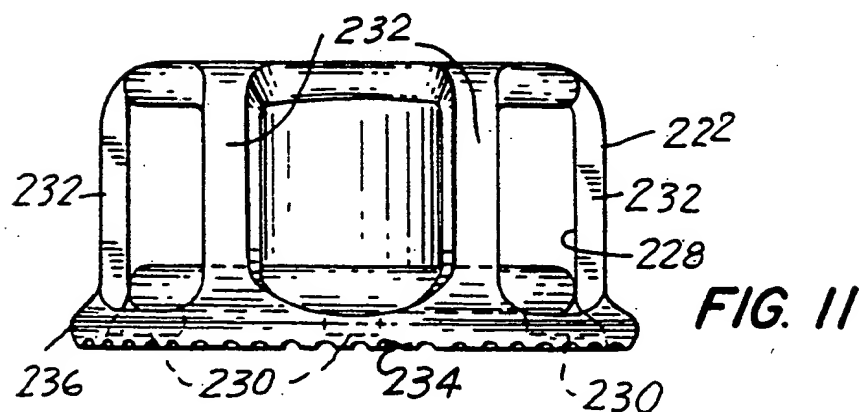
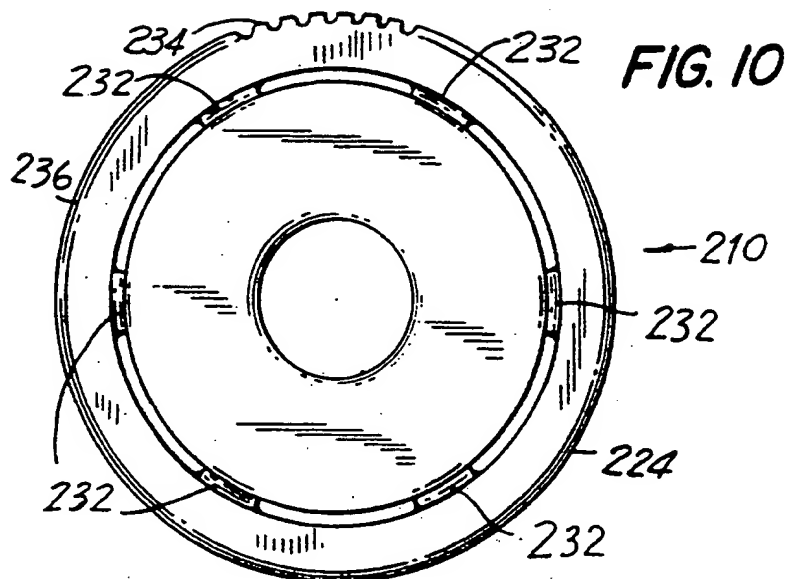
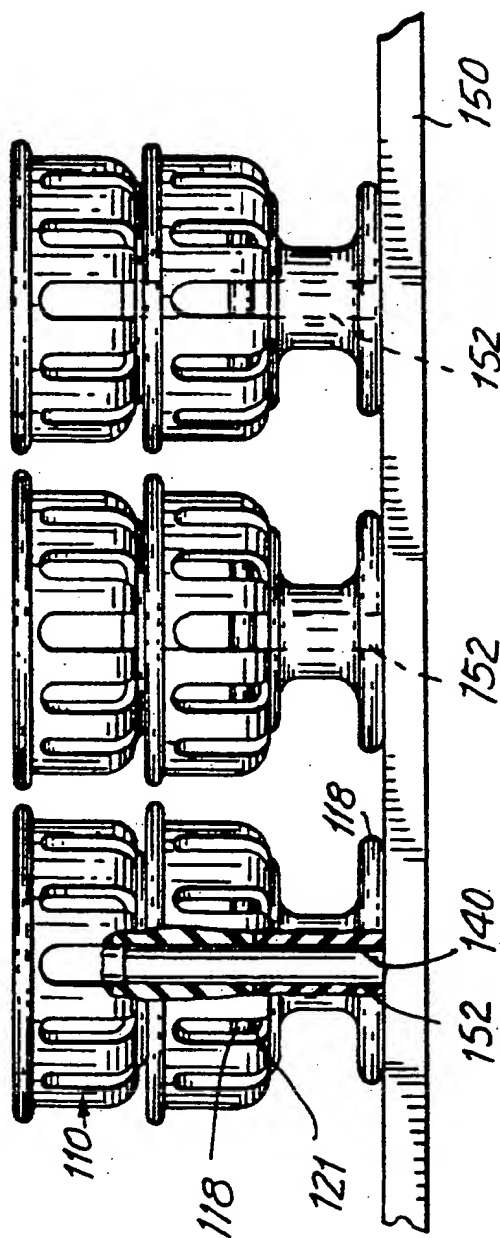


FIG. 13



FLEXIBLE LOCKING HAIR CURLER

BACKGROUND OF THE INVENTION

1. FIELD OF THE INVENTION

The invention relates generally to personal care devices for grooming hair. More particularly, the invention relates to hair curlers.

DESCRIPTION OF THE PRIOR ART

Hair curling devices are widely used and are available in numerous embodiments. The term "devices" as used herein refers to non-energized, passive articles and is distinguishable from "appliances" which may be used to refer to energized, active apparatus requiring some power input for proper operation. Appliances may, for example, produce heat, radiation, air flow, fan movement, etc. Hair curlers in particular are devices which may be formed in a wide variety of shapes and configurations, all generally intended to have a tress of hair wound and retained thereupon for a predetermined time, with or without heat and with or without hair treating solutions, in order to set a particular curl shape in the tress of hair.

Hair curlers generally comprise a hair rolling portion, and a closure member for retaining the hair upon the hair rolling portion. The latter is usually a generally cylindrical member constituting a core or mandrel about which the hair is wound, this member having a predetermined cross-section and bounded by end flanges having a greater diameter than the core. Most often the closure member is a piece that is separate from the hair curler such as a clip, "bobby" pin, etc. which must be attached to the curler in a way to retain hair wound upon the mandrel. Hair curlers with separate closure members are somewhat difficult to use on one's own hair because the user must use her hands to wind the hair on the hair rolling portion, hold it there with one hand while grasping a clip, for example, with the other hand, and then maneuver the clip (often without looking) to lock the hair in place. Another disadvantage of separate closure members is that they generally must be made hard and relatively inflexible in order to satisfactorily hold hair and this may make them uncomfortable to the user.

Some hair curlers may have closure members affixed to the hair rolling portion. Such members are really separate pieces that are mechanically hinged or otherwise movably joined with the hair rolling portion. These devices still remain uncomfortable, awkward to use and, additionally, are more costly to manufacture.

Accordingly, it is an object of this invention to provide a hair curler having a hair rolling portion integrally and inseparably formed with a closure member.

It is another object of this invention to provide a hair curler wherein the hair rolling portion and the closure member are formed of the same relatively soft material such as, for example, a viscoelastic polymer.

It is yet another object of this invention to provide a hair curler having a hair rolling portion integrally formed with the closure member while simultaneously providing a hair curler capable of being heated and retaining heat for a sufficient time to curl hair.

It is still a further object of this invention to provide a new method for curling hair, the method comprising winding the hair upon a spool shaped hair rolling portion having an integrally formed closure member, then

folding the closure member axially relative to the spool member to retain the hair wound thereupon.

SUMMARY OF THE INVENTION

These and other objects are achieved by the preferred embodiment of the invention which is an improved hair curler comprising: a spool shaped body comprising a cylindrical shaft portion, a first flange integrally connected to said shaft portion at one end thereof and a second flange integrally connected to said shaft portion at the other end thereof; a cup-shaped closure member attached to and extending from said second flange, said cup-shaped closure member adapted to be placed in either one of two positions, i.e. an open position in which the rim of said cup-shaped closure member is distal from said first flange and a closed position in which the rim of said cup-shaped closure member is proximate to said first flange, said curler thereby capable of retaining hair between said shaft portion and said cup-shaped closure member when the latter is in said closed position, said hair being retained between said first flange and said rim.

In another embodiment, the aforementioned rim of said cup-shaped closure member is secured to said second flange by a plurality of circumferentially spaced, longitudinally extending strap members each having a predetermined length and having apertures therebetween.

In yet another embodiment, the aforementioned strap members are alternated circumferentially with a plurality of short locking tabs depending from the rim. In the closed position these locking tabs aid in retaining hair wound upon the curler.

The invention also includes a new method for curling hair, the method comprising the steps of: winding a predetermined amount of hair onto a spool member having a first flange, a second flange and a pliable, cup-shaped closure member the wall of which extends from said second flange, in a direction away from said first flange, and terminates in a rim at an open end; and moving the wall of said cup-shaped closure member substantially 180° relative to said second flange to place the rim of said cup-shaped closure member proximate said first flange and thereby retain the hair on said spool member.

The invention also includes a new method for heating spool shaped hair curlers comprising the steps of: providing a heatable spool shaped hair curler with an axially aligned bore therethrough; placing at least one axially bored spool shaped, heatable hair curler onto a heatable post by threading the latter through the axial bore of said spool shaped hair curler, said post having a predetermined length sufficient to extend substantially through said axial bore and a predetermined diameter substantially equal to the inside diameter of said axial bore; and heating said heatable post to a predetermined temperature.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side elevational view of a hair curler constructed in accordance with the principles of this invention.

FIG. 2 is a cross-sectional view of FIG. 1.

FIG. 3 is a cross-sectional view of an alternative embodiment of the hair curler of FIG. 1.

FIG. 4 is a top plan view of the hair curler shown in FIGS. 1 and 2.

FIG. 5 is a side elevational view, partly in cross-section, of the embodiment of FIG. 2 shown in closed configuration about a tress of hair.

FIG. 6 is a cross-sectional, elevational view of an alternative embodiment of the invention.

FIG. 7 is a plan view of FIG. 6.

FIG. 8 is a plan view of alternative embodiment of the hair curler shown in FIG. 7.

FIG. 9 is a side elevational view of another alternative embodiment of a hair curler constructed in accordance with the principles of this invention.

FIG. 10 is a top plan view of FIG. 9.

FIG. 11 is a side elevational view of the embodiment of FIG. 9 shown in a closed position, without hair.

FIG. 12 is a bottom plan view of FIG. 11.

FIG. 13 is a schematic side elevational view of an embodiment of an apparatus for heating a hair curler constructed in accordance with the principles of this invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to FIG. 1 there is shown a side elevational view of an improved hair curler 10 constructed in accordance with the principles of this invention. Hair curler 10 comprises a bobbin or spool shaped hair roller portion 12 and a cup-shaped hair closure member or clasp portion 14 integrally attached thereto. Closure means 14 comprises a generally open cup-shaped structure axially aligned with hair roller portion 12 and having a generally cylindrical wall 22, rim 24, inside surface 26 and outside surface 28. The lower annular edge of cylindrical member 22 is integrally joined to flange 20 along an annular joining portion 30. (A similar effect is achieved if the cup-shaped closure means 14 is considered to comprise a bottom surface abutting the outer surface of flange 20.) As will be understood below, hair to be curled with hair curler 10 is wound upon the shaft portion 16 between flanges 18 and 20 and is retained in hair roller portion 12 by closure means 14. Flange 18 because it does not have any associated cup-shaped closure member is occasionally referred to herein as a free flange. Shaft portion 16 may be of any desired cross-section although the drawings show embodiments having circular cross-sections.

In the preferred embodiment, the entire hair curler 10 is formed from a pliable, elastomeric type of material. The material is capable of being heated (by an appliance means shown in FIG. 13) and of retaining a sufficient amount of heat for a time sufficient to curl hair. The material from which the curler is made is sufficiently pliable to enable the cup-shaped closure means 14 to be flipped between two positions about annular portion 30 substantially 180° relative to the surface of flange 20 (i.e. relative to a normal to axis 32): an open, unlocked position as shown in FIGS. 1-4, with rim 24 distal from flange 18, and a closed, locked position as shown in FIG. 5. Hair may be wound upon the hair roller portion when the closure means is in the open position. When in the locked position, outer surface 28 of the closure portion faces inwardly and rim 24 is placed proximate to flange 18 thereby retaining any hair wound upon shaft portion 16 within the space 33 bounded by shaft 16, flanges 18 and 20 and closure wall 28. The hair near the roots is not enclosed in space 33 and is able to, because of the pliability of rim 24 (and, to some extent, because of the flexibility of the hair) extend from space 33 between rim 24 and flange 18. Depending on the

amount of hair wound about shaft 16, rim 24 may be at, above or below the level of flange 18 and may be at various radial distances therefrom. Flange 20 has a top surface 21 which in the open, unlocked configuration of the curler forms the bottom of cup-shaped closure portion 14 and, in the closed, locked configuration forms one outer side as shown in FIG. 5.

Hair curler 10 may be constructed with an axial bore 40 as shown in FIG. 2 or without such bore as shown in FIG. 3. In the embodiment shown in FIG. 2, axial bore 40 contains a hollow cylindrical shaft or core member 42, the ends of which may be recessed slightly from the outer surfaces of flanges 18 and 20 as shown. Flanges 18 and 20 may have annular projections 44 and 46, respectively, extending into hollow portion 40 in order to retain the shaft. Shaft 42 may be formed from metal or other good heat retaining material and with a variety of cross-sectional shapes (not shown), and may be used to facilitate heating curler 10 prior to its application to the hair (in accordance with a method described below).

The relative dimensions of the parts of curler 10 may be varied provided the curler can still operate as described above. For example, shaft 16 may be longer or shorter than shown in the various Figures and the height of wall 22 may be correspondingly increased or decreased. The radial difference between the outermost points of flanges 18 and 20 and the surface of shaft 16 may be changed to accommodate a greater or lesser amount of hair, and the size of cup-shaped member 14 may be adjusted. Also, the radii of flanges 18 and 20 need not be identical.

An alternative embodiment of the invention is shown in FIG. 6 as roller 110 comprising cup-shaped closure portion 114 and spool shaped hair roller portion 112. Flanges 118 and 120 and bore 140 are similar to parts 18, 20 and 40, respectively, in FIG. 2. Closure portion 114 is provided with a rim 124 having a radially outwardly extending flange 125 and attached to flange 120 by wall 128 which is formed of a plurality of longitudinally extending, circumferentially spaced apertures 127 interposed between a plurality of strap members 127a. Apertures 127 extend perpendicularly from, and a predetermined distance below, rim 124 to the top of flange 120 to which wall 128 is connected in order to enable wall 128 to be properly positioned adjacent the bottom flange in a closed position. Part of closure portion 114 is shown in phantom at 130 to show the approximate appearance of curler 110 in a closed position (without hair). It should be understood that in an actual curler, wall 128 would be annularly situated relative to flange 118 in a closed position. As shown in FIG. 7, flange 125 is provided with a plurality of annularly spaced longitudinally extending ribs 129 in order to enhance the gripping action between the roller 110 and the hair wound thereupon. As shown in FIG. 8, the ribs may be made as smaller ribs 129a. Alternatively, the outer surface of flange 125 may be provided with a knurled surface (not shown) or other irregular surface means to enhance gripping action.

Wall 128 of roller 110, being provided with apertures 127, enables rim 124 and flange 125 to be positioned closer to the bottom, free flange of the roller when it is in closed position 130. The natural elasticity of the material in wall 128 which would normally tend to exert a radially outward force on the rim in a closed position is, by virtue of the apertures, decreased somewhat, thus preventing the material in the wall from pushing the rim away excessively. It will be understood that the result-

ing normally tight fit between flange 125 and free flange 118 (although they do not necessarily touch as shown in FIG. 6) enhances the gripping of the hair. The outwardly extending nature of flange 125 (best seen in FIG. 6) further decreases the gap between flange 118 and rim 124, thus enhancing the gripping action on hair wound upon the roller. Additionally, apertures 127 permit air flow into the interior 132 of the closed roller by either natural means or artificial means such as a hair dryer, etc.

The wall of the closure member may be parallel to the axis of the hair curler, as shown by wall 128 relative to axis 132 in the embodiment of FIG. 6, or may be tilted radially outwardly relative to the axis, as shown by wall 28 relative to axis 32 in the embodiment of FIG. 1. It will be understood that the wall of the closure member could be tilted radially inwardly in the open position. This would require the rim to be radially stretched (over the flange to which it is attached) as the closure member is placed into the locked position and would result in the rim having a tighter grip on the hair against the free flange.

Yet another alternative embodiment of the invention is shown in FIGS. 9-12 in the form of hair curler 210. The primary difference between this and the previous embodiments lies in the structure of wall 222 which comprises a plurality of circumferentially spaced locking tabs 230 alternatively interspersed between strap members 232. As shown in FIG. 9, tabs 230 extend substantially perpendicularly downwardly from rim 224 but do not reach flange 220. While tabs 230 are substantially parallel to strap members 232 when the curler is in the open position (FIG. 9), tabs 230 tend to lie on the surface of flange 218 in the closed position (FIG. 12), thereby creating tension between rim 224 and flange 218. It will be understood that this tension is due to the interlocking or interdigitating cooperative action between tabs 230 and flange 218. In this embodiment, the various projections 234 in the outwardly directed flange 236 of rim 224 do not have as great a locking effect as tabs 230. While all of the tabs are shown lying on flange 218, in practice some tabs will be as shown while others may curl inwardly pointing toward the interior of the closed curler.

The various embodiments of spool shaped hair curlers of the present invention may be heated pursuant to a new method made possible by the present invention. The embodiment of FIG. 6 is shown in FIG. 13 in order to explain the operation of the new method. A plurality of spool shaped hair curlers may be heated easily by virtue of bores 140 which, as best seen in FIG. 13 enable curlers 110 to be stacked on a heating base 150. The latter is shown schematically and may be any suitable heating means for supporting and heating a plurality of heat-conducting posts 152 extending vertically from base 150. Curlers 110 are stacked on posts 152 as shown, with the free flange 118 of each top curler abutting surface 121 of the adjacent bottom curler. This type of nesting arrangement minimizes the post length required for a given number of curlers. Posts 152 may be arranged on base 150 in any desirable pattern and the entire assembly may be covered by a cover (not shown) to retain heat around the curlers in the manner of a conventional hairsetter.

Posts 152 have a diameter and cross-section substantially equal to the inside diameter and cross-section of bores 140 in order to enhance heat conductivity. While the embodiment in FIG. 13 only shows a stack two-

high, it will be understood that any number of curlers may be stacked on each post. Obviously, the length of posts 150 must be increased accordingly and should extend from base 150, through the bore of the lower curler and through the bore of the top and intermediate curlers. To optimize heat transfer from the posts to the curlers, the posts should extend substantially if not entirely through the bore of the top curler.

It will be understood by those skilled in the art that numerous other modifications and improvements may be made to the preferred embodiment of the invention disclosed herein without departing from the spirit and scope thereof.

What is claimed is:

1. A hair curler comprising:
 - a spool-shaped body comprising a cylindrical shaft portion, a first flange integrally connected to said shaft portion at one end thereof, and a second flange integrally connected to said shaft portion at the other end thereof;
 - a cup-shaped closure member having a rim and being attached to and extending from said second flange, the rim of said cup-shaped closure member being secured to said second flange by a plurality of circumferentially spaced strap members, said cup-shaped closure member adapted to be placed in one of two positions, said two positions consisting of an open position in which the rim of said closure member is distal from said first flange, and a closed position in which the rim of said closure member is proximate to said first flange; and
 - means interposed between said strap members for releasably fastening said rim to said first flange when said closure member is in said closed position.
2. A hair curler according to claim 1 wherein said strap members extend substantially perpendicular to said rim when said cup-shaped closure member is in said open position.
3. A hair curler according to claim 1 wherein said means and said strap members are alternately situated about the rim of said cup-shaped closure member.
4. A hair curler according to claim 1 wherein said first and second flanges are each circular and of equal diameter.
5. A hair curler according to claim 1 wherein said first flange and the open end of said cup-shaped closure member are circular and wherein said open end has, in said open position, a diameter greater than or equal to that of said first flange.
6. A hair curler according to claim 1 wherein said spool shaped body and said cup-shaped closure member are integrally formed of a pliable material.
7. A hair curler according to claim 1 wherein said rim is further provided, when viewed in an open position, with a radially outwardly extending annular flange.
8. The hair curler of 7 wherein said annular flange is provided with an irregular surface means at its most radially outward surface for engaging hair wound upon said curler to maintain said curler in engagement with said wound hair when said closure member is in said closed position.
9. A hair curler according to claim 1 wherein said spool shaped body is provided with an axial bore.
10. A hair curler according to claim 9 wherein said bore extends through said spool shaped body and further comprising a hollow core member extending through said axial bore, said core member having a

length less than or equal to the distance between the outer surfaces of said first and second flanges.

11. The hair curler of claim 1 wherein said means comprises a plurality of circumferentially spaced locking tabs, each locking tab extending substantially parallel to said strap members when said closure member is in said open position, and each having a predetermined length and being attached at one end thereof to the rim

bore and a predetermined diameter substantially equal to the inside diameter of said axial bore; placing another of said spool shaped heatable hair curlers onto the same heatable post in a nesting manner such that the first flange of one spool shaped hair curler is contiguous to the bottom of the cup-shaped closure member of the adjacent